

(Currently Amended) 1. An amplified spontaneous source (ASE) comprising:

~~an a single~~ optical pump coupled to a pump splitter with a selected splitting ratio depending on an optical pump power, a fiber length and type and a selected output power for projecting a first and a second pump lights with said selected splitting ratio to a first end and a second end respectively of an erbium doped fiber (EDF) for generating a first amplified spontaneous emission (ASE) and a second ASE respectively;

a ~~reflecting means~~ reflector for reflecting said first ASE via a first wavelength selection means back to said EDF for transmitting and effecting a spectrum transform of said first ASE to generate a spectrum-transformed ASE in said EDF; and

a second wavelength selection means coupled to said pump splitter for receiving said pump light into said EDF for generating said second ASE to combine with said spectrum-transformed ASE for generating an output optical signal having a broader spectrum than said first ASE and second ASE.

(Currently Amended) 2. The ASE of claim 1 wherein:

said spectrum-transformed ASE generated in said EDF comprising substantially a L-band signal and said second ASE generated in said EDF comprising substantially a C-band signal for generating an output optical signal having a C-band and L-band combined signal having a spectrum flatness depending on said selected splitting ratio.

(Currently Amended) 3. The ASE of claim 1 wherein:

said ~~reflecting means~~ reflector comprising a reflective coating onto a end-surface of an optical fiber spliced with said first wavelength selective means.

(Currently Amended) 4. The ASE of claim 1 wherein:

said spectrum-transformed ASE generated in said EDF comprising substantially a L-band signal at a first length in said EDF and said second ASE generated in said EDF comprising substantially a C-band signal at a second length in said EDF wherein said first length and said second length depending on said selected splitting ratio.

~~said first wavelength selection means and said second wavelength selection means are respectively a first and a second wavelength division-multiplexing (WDM) devices.~~

(New) 5. The ASE of claim 1 wherein:

said single optical pump outputting a power between 50 mW to 80 mW coupled to said pump splitter with a selected splitting ratio between 1:1 to 1:2.

(Currently Amended) 6. The ASE of claim 1 wherein:

said pump splitter is an adjustable pump splitter for adjusting said selected splitting ~~a power~~ ratio of projecting said first and said second pump lights.

(Currently Amended) 7. The ASE of claim 1 wherein:

said pump splitter is a fixed-ratio pump splitter for pumping ~~a fixed power ratio of~~ said first and said second pump lights with said selected splitting ratio set at a fixed-ratio.

(Currently Amended) 8. The ASE of claim 4 1 wherein:

said first wavelength selection means and said second wavelength selection means are respectively a first and a second wavelength division-multiplexing (WDM) devices; and

said ~~reflecting means~~ reflector comprising a reflective coating onto an fiber end-surface of said first WDM.

(Currently Amended) 9. An amplified spontaneous source (ASE) comprising:

an a single optical pump coupled to a pump splitter with a selected splitting ratio depending on an optical pump power, a fiber length and type and a selected output power for projecting a first and a second pump lights into a gain medium; and

a ~~reflecting means~~ reflector for reflecting said first pump light according to said selected splitting ratio into said optical gain medium for transmitting and effecting a spectrum transform of said first pump light therein to generate a spectrum transformed ASE with a selected spectrum transferred power level according to selected splitting ratio for generating an output optical signal having a spectrum including a spectrum-transformed wavelength range.

(Currently Amended) 10. The ASE of claim 9 further comprising:

a first wavelength division-multiplexing (WDM) means for multiplexing an a first ASE reflected from said reflecting means reflector of said first pump light into said optical gain medium and a second WDM means connected to said gain medium opposite said first WDM means for multiplexing a second ASE generated from said second pump light for generating a combined output optical signal having a broader spectrum than said first ASE generated from said first pump light in said gain medium and said second ASE.

(Currently Amended) 11. The ASE of claim 9 further wherein:

said gain medium is an erbium doped fiber (EDF) of a selected length depending on said splitting ratio of said pump splitter.

(Currently Amended) 12. The ASE of claim 11 wherein:

said erbium doped fiber (EDF) having said selected ~~a pre-designated~~ length for effecting said spectrum transform of said first ASE reflected into said EDF at a specific length in said EDF depending on said splitting ratio.

(Currently Amended) 13. The ASE of claim 9 wherein:

said ~~reflecting means~~ reflector comprising a reflective coating coated over an end face of said fiber.

(Currently Amended) 14. The ASE of claim 9 10 wherein:

said first ASE generated from said first pump light in said gain medium having a peak wavelength near a C-band when pumped into said gain medium according to said selected splitting ratio for effecting said spectrum transform for generating a substantially flat L-band ASE.

(Currently Amended) 15. The ASE of claim 9 10 wherein:

said second ASE generated in said gain medium is a C-band optical signal for combining with said substantially flat L-band signal to project an output optical signal having a broadband range over eighty nanometers (nm).

(Currently Amended) 16. The ASE of claim 9 wherein:

said pump splitter is an adjustable pump splitter for adjusting said selected splitting ~~a power~~ ratio of projecting said first and said second pump lights.

(Canceled) 17. An amplified spontaneous source (ASE) comprising:

an erbium doped fiber (EDF) for transmitting an amplified spontaneous emission (ASE) signal therein; and

a reflective means for reflecting a reflected ASE having a peak wavelength near a C-band into said EDF for generating a substantially flat L-band optical signal.

(Canceled) 18. The ASE of claim 17 further comprising:

a wavelength division-multiplexing (WDM) means for demultiplexing an ASE signal reflected from said reflective means into said EDF.

(Canceled) 19. The ASE of claim 17 wherein:

said erbium doped fiber (EDF) having a pre-designated length for effecting a generation of said substantially flat L-band ASE signal.

(Canceled) 20. The ASE of claim 17 wherein:

said reflective means comprising a reflective coating coated over an end face of an optical fiber spliced into a wavelength selective means.

(Canceled) 21. The ASE of claim 17 further comprising:

a means for pumping a light generating a second C-band ASE signal for combining with said substantially flat L-band signal to project an output optical signal having a broadband range over eighty nanometers (nm).

(Currently Amended) 22. A method for generating a broadband signal comprising:

projecting from a single optical pump into a pump splitter with a selected splitting ratio depending on an optical pump power, a fiber length and type and a selected output power for projecting a first pump light and a second pump light into a gain medium for transmitting and reflecting ~~an~~ a first ASE signal ~~from generated by~~ said first pump light according to said selected splitting ratio in said gain medium for generating a spectrum-transformed ASE signal having a broadband ready-combination spectrum over a range of wavelengths of said broadband signal.

(Currently Amended) 23. The method for claim 22 further comprising:

projecting a second pump light according to said selected splitting ratio into said gain medium for generating a second ASE signal for combining with said spectrum-transformed ASE signal into said broadband optical signal.

(Canceled) 24. An amplified spontaneous source (ASE) comprising:

a single segment of gain medium for outputting a broadband optical signal therefrom.

(Currently Amended) 25. An amplified spontaneous source (ASE) comprising:

a single pump source connecting to a single pump splitter with a selected splitting ratio depending on an optical pump power, a fiber length and type and a selected output power to project two branched pump lights into a single segment of gain medium with a selected length based on said selected splitting ratio and said optical pump power for outputting a combined broadband optical signal therefrom.

(Canceled) 26. An amplified spontaneous source (ASE) comprising:

a single segment of gain medium for outputting a broadband optical signal therefrom having a broadband range about 80 nanometers and a flat spectrum.